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(54) IMAGE FORMING DEVICE

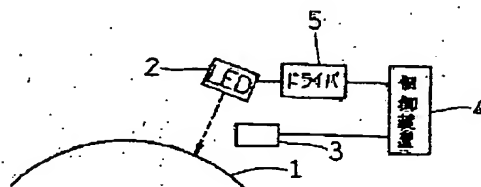
(57) Abstract:

PURPOSE: To correct the light quantity of the destaticizing means of a blank lamp, etc., with a simple and inexpensive constitution by measuring a temperature in the vicinity of the destaticizing means, and adjusting the quantity of power supplied to the destaticizing means, based on a measured temperature.

CONSTITUTION: A temperature measuring device 3 measures an atmospheric temperature in the vicinity of the installed position of the blank lamp 2 disposed opposite to a photosensitive body 1. Relations between the atmospheric temperature in the vicinity of the blank lamp 2 and the light quantity of an LED composing the blank lamp 2 and between the atmospheric temperature and the electrifying quantity of the photosensitive body 1 are previously inputted into a memory in a controller 4 as table data. Data obtained by the measurement by the temperature measuring device 3 is inputted into the controller 4. In the controller 4, a prescribed light quantity based on the atmospheric temperature is selected based on the table data in the memory, and a command value corresponding to the light quantity is outputted to a driver 5. Then, the quantity of the power

supplied to the blank lamp 2 is adjusted by the driver 5 to adjust the light quantity.

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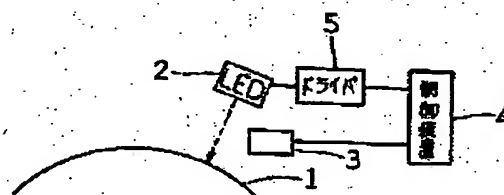
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(54) 【発明の名称】 画像形成装置

(57) 【要約】

【目的】 画像形成装置の例えばブランクランプにおける光量調整を比較的簡単且つ安価な構成にて行い得るようになすこと。

【構成】 感光体 1 及びブランクランプ 2 の設置位置周囲の雰囲気温度が温度測定装置 3 にて測定される。そして、この測定データに基づいて、上記ブランクランプ 2 を構成する LED に対する給電量が調節される。





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## 【特許請求の範囲】

【請求項1】 感光体上の電荷を露光により除去する除電手段を備えた画像形成装置において、当該画像形成装置の筐体内での少なくとも上記除電手段近傍の温度を測定する温度測定手段と、上記温度測定手段により測定された温度に基づいて上記除電手段に対する給電量を調節する制御手段とを具備してなることを特徴とする画像形成装置。

## 【発明の詳細な説明】

## 【0001】

【産業上の利用分野】 本発明は、例えば複写機等の画像形成装置に係り、詳しくは、感光体上の電荷を露光により除去する除電装置に関するものである。

## 【0002】

【従来の技術】 一般にこの種の画像形成装置においては、一掃帯電された感光体上の所定領域以外の部分の電荷を除去するために、ブランクランプによる露光操作が実施される。上記ブランクランプは、例えば発光ダイオード（以下LED）を上記感光体の軸芯方向へ並設することにより構成されているが、各画像形成装置毎にその性能（特に光量）にバラツキがあることから、これをほぼ一定の品質に補正することが必要とされる。そこで、上記のような補正機能を備えた画像形成装置としては、例えば特開昭61-180262号公報に開示のものが知られている。上記公報に開示の装置では、ブランクランプに対して受光素子が並設されており、この受光素子により、感光体表面からの反射光の光量が検出される。そして、この反射光量に基づいて、補正回路から上記ブランクランプの駆動回路に補正信号が出力され、これにより上記ブランクランプにおける光量調整が行われる。具体的には、各LEDに対する印加電流のデューティ比を変化させることにより、光量補正が行われる。

## 【0003】

【発明が解決しようとする課題】 ところが、上記のような従来の画像形成装置においては、ブランクランプの光量補正に必要とされる上記受光素子が價格的に高価であることから、この使用が装置全体のコスト低減を図る際の阻害要因となっている。そこで、本発明は、上記事情に鑑みて創案されたものであり、比較的簡単且つ安価な構成にてブランクランプ等の除電装置の光量補正を行い得る機能を備えた画像形成装置の提供を目的とするものである。

## 【0004】

【課題を解決するための手段】 上記目的を達成するために、本発明が採用する主たる手段は、その要旨とすると、感光体上の電荷を露光により除去する除電手段を備えた画像形成装置において、当該画像形成装置の筐体内での少なくとも上記除電手段近傍の温度を測定する温度測定手段と、上記温度測定手段により測定された温度に基づいて上記除電手段に対する給電量を調節する制

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御手段とを具備してなる点に係る画像形成装置である。これは、例えば図3に示す如く、除電手段の光量とその周囲の雰囲気温度の影響を受けてほぼ比例的関係の元に変化する点に着目したものである。

## 【0005】

【作用】 本発明に係る画像形成装置においては、筐体内での少なくとも除電手段近傍の雰囲気温度が温度測定手段により測定され、この測定値に基づいて、制御手段により除電手段に対する給電量が調節される。これにより、上記除電手段においては、その光量が調整される。

## 【0006】

【実施例】 以下添付図面を参照して、本発明を具体化した実施例につき説明し、本発明の理解に供する。尚、以下の実施例は、本発明を具体化した一例であって、本発明の技術的範囲を限定する性格のものではない。ここに、図1は本発明の一実施例に係る画像形成装置の要部の概略構成図、図2は、上記要部構成に係る概略ブロック図、図3は除電手段における光量と雰囲気温度との関係を示すグラフ、図4は感光体における帯電量と雰囲気温度との関係を示すグラフである。この実施例に係る画像形成装置では、図1、図2に示す如く、感光体1及びこの感光体1に対向して配設されるブランクランプ2の設置位置近傍の雰囲気温度を測定する温度測定装置（例えばサーミスタ）が配設されており、この温度測定装置3は、当該画像形成装置の制御を司る制御装置4に接続されている。上記制御装置4は、CPU、各種インターフェイス、メモリ等を具備して構成されており、ドライバ5を介して上記ブランクランプ2に接続されている。上記ブランクランプ2は、例えばLEDを上記感光体1の軸芯方向へ並設することにより構成されている。この場合、上記温度測定装置3に代えて、従来より当該画像形成装置の筐体内の雰囲気温度を測定すべく設置されている他の温度測定装置を利用し、この温度測定装置からの出力信号を用いるようにしても良い。これにより、異なるコスト低減を図ることが可能となる。上記制御装置4内のメモリには、雰囲気温度と上記ブランクランプ2を構成するLEDにおける光量との関係及び雰囲気温度と上記感光体1における帯電量との関係（図3及び図4参照）が予めテーブルデータとして入力されている。これは、上記各図におけるグラフから明らかなように、LEDにおける光量とその周囲の雰囲気温度に影響を受けてほぼ比例的関係の元に変化する点及び感光体1における帯電量とその周囲の雰囲気温度の影響を受けてほぼ比例的関係の元に変化する点に着目し、それらを具体的に考慮したものである。

【0007】 従って、本実施例装置においては、まず、上記温度測定装置3によりその周囲の雰囲気温度が測定され、この測定データが上記制御装置4に入力される。上記制御装置4においては、上記メモリ内の上記テーブルデータに基づいて、即ち、雰囲気温度に基づいた所定



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の光量が選択され、その光量に対応する指令値がドライバ5に出力される。そして、このドライバ5にて上記ブランクランプ2に対する給電量が調節される。即ち、上記ブランクランプ2に対しては、パルス幅の変調あるいはパルス周期の変調、更にはパルス高さの変更により給電量が調節され、その光量調整が行われる。具体的に説明すると、検出された雰囲気温度におけるブランクランプ2の光量の変化率Aと感光体の帯電量の変化率Bを算出・比較し、AがBより大きいときには、ブランクランプの光量が小さくなるような光量が選択され、AがBより小さいときには、ブランクランプの光量が大きくなるような光量が選択され、ブランクランプへの給電量が調整される。本実施例に係る画像形成装置は上記したように構成されているため、比較的簡単且つ安価な構成にてブランクランプ2の光量補正を行うことができる。更に、感光体1における帯電量も考慮されていることから、その光量補正は実情に則した制度の高いものとなる。尚、上記感光体1に係る感度はその製造メーカーにおける出荷段階において検査の結果予め知り得ることから、この感度をも考慮して上記ブランクランプ2に対する給電量を調節し、光量調整に対して更なる信頼性を確保するようにしても良い。更に、本実施例装置においては、上記感光体1の既知の感度を考慮しつつ、上記ブランクランプ2に使用されるLEDの光量を予めランク分けしておき、このランク分けに対応する給電量を適宜選択して上記ドライバ5へそれに対応する指令値として出力し、上記ブランクランプ2における光量調整を行うようにしても良い。更にまた本実施例装置においては、上記温度測定装置3により検出される測定データを考慮しつつ、ブランクランプ2の点検作業時に試験的に画像処理を行い、これとの兼ね合いよりキーボード6からブランクランプ2に対する給電量を調節する指令を与えるようにし\*

\*でも良い。この場合、実際の画像を見ながらブランプ2における光量調整を行い得ることから、より微妙な制御が可能となる。尚、上記実施例においては、除塵装置の一例であるブランプ2における光量調整を行う場合を例に説明したが、本発明に係る技術は、感光体表面のクリーニング時に用いられる除塵ランプにおける光量調整の際にも適用し得るものである。

[0008]

【発明の効果】本発明は、上記したように、感光体上の  
10 露光を露光により除去する除電手段を備えた画像形成装  
置において、当該画像形成装置の筐体内での少なくとも  
上記除電手段近傍の温度を測定する温度測定手段と、上  
記温度測定手段により測定された温度に基づいて上記除  
電手段に対する給電量を調節する制御手段とを具備して  
なることを特徴とする画像形成装置であるから、比較的  
簡単且つ安価な構成にて除電装置の光量補正を行うこと  
ができる。

【図面の簡単な説明】

【図１】 本発明の一実施例に係る画像形成装置の要部  
20 の概略構成図。

【図2】 上記要部構成に係る概略ブロック図。

【図3】 除電手段における光雲と雰囲気温度との関係を示すグラフ。

【図4】 感光体における帯電量と雰囲気温度との関係を示すグラフ。

【符号の説明】

### 1. 感光体

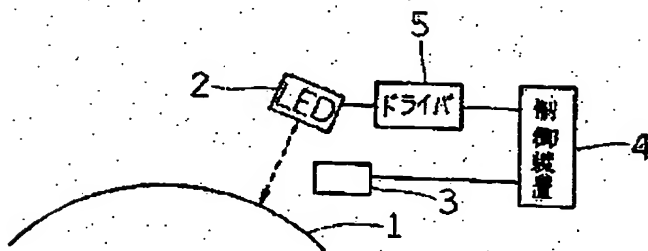
## 2…ブランクランブ

### 3…温度測定装置

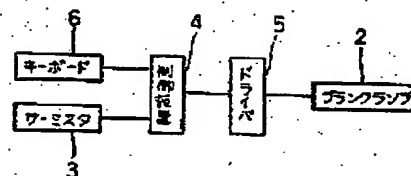
#### 4…制御装置

5...ドライブ

【☒】



・【図2】



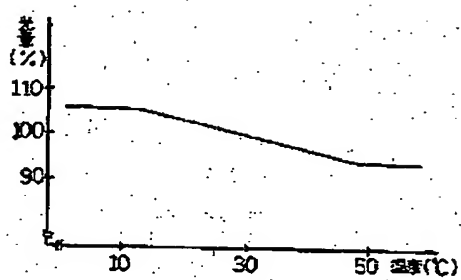




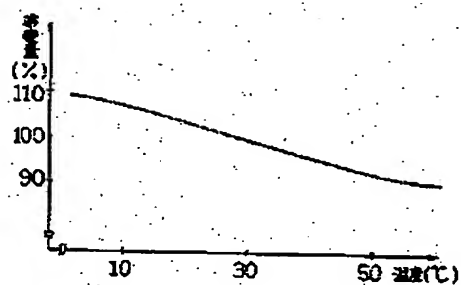
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【図3】



【図4】





## JP 05 - 107 888 A

### \* NOTICES \*

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### CLAIMS

#### [Claim(s)]

[Claim 1] Image-formation equipment which possesses a thermometry means within the case of the image formation equipment concerned measure the temperature near [ above-mentioned ] the electric discharge means at least, and the control means which adjust the amount of electric supply to the above-mentioned electric discharge means based on the temperature measured by the above-mentioned thermometry means in image-formation equipment equipped with an electric discharge means to by which exposure removes the charge on a photo conductor, and is characterized by the bird clapper.

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### DETAILED DESCRIPTION

#### [Detailed Description of the Invention]

[0001]

[Industrial Application] this invention relates to image formation equipments, such as a copying machine, and relates to the electric discharger from which the charge on a photo conductor is removed by exposure in detail.

[0002]

[Description of the Prior Art] In order to remove the charge of portions other than the predetermined field on the photo conductor by which uniform electrification was carried out in this kind of image formation equipment generally, exposure operation with a blank lamp is carried out. this although the above-mentioned blank lamp is constituted by installing light emitting diode (henceforth, Light Emitting Diode) in the direction of an axis of the above-mentioned photo conductor, since variation is in the performance (especially quantity of light) for every image formation equipment -- the quality of about 1 law -- an amendment -- things are needed Then, as image formation equipment equipped with the above amendment functions, the thing of an indication is known by JP,61-180262,A, for example. With the equipment of an indication in the above-mentioned official report, the photo detector is installed to the blank lamp and the quantity of light of the reflected light from a photo conductor front face is detected by this photo detector. And based on this amount of reflected lights, an amendment signal is outputted to the drive circuit of the above-mentioned blank lamp from an amendment circuit, and, thereby, quantity of light adjustment in the above-mentioned blank lamp is performed. Specifically, quantity of light amendment is performed by changing the duty ratio of the force current to each Light Emitting Diode.

[0003]

[Problem(s) to be Solved by the Invention] However, in the above conventional image formation equipments, since the above-mentioned photo detector needed for quantity of light amendment of a blank lamp is expensive in price, this use is a prevention factor at the time of planning cost reduction of the whole equipment. Then, it is originated in view of the above-mentioned situation, and this invention aims at offer of image formation equipment equipped with the function in which quantity of light amendment of electric dischargers, such as a blank lamp, can be performed with comparatively easy and cheap composition.

[0004]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, the main means which this invention adopts in the image formation equipment with which the place made into the summary was equipped with an electric discharge means by which exposure removes the charge on a photo conductor. It is image formation equipment concerning the point of coming to provide a thermometry means within the case of the image formation equipment concerned to measure the temperature near [above-mentioned] the electric discharge means at least, and the control means which adjust the amount of electric supply to the above-mentioned electric discharge means based on the temperature measured by the above-mentioned thermometry means. This notes the point that the quantity of light of an electric discharge means changes to-like-proportionally-related origin mostly in response to the influence of the ambient temperature of the circumference, as shown in drawing 3.

[0005]

[Function] In the image formation equipment concerning this invention, the ambient temperature near the electric discharge means is measured by the thermometry means at least, and the amount of electric supply to an electric discharge means within a case is adjusted by control means based on this measured value. Thereby, the quantity of light is adjusted in the above-mentioned electric discharge means.

[0006]

[Example] Below, with reference to an accompanying drawing, it explains per [which materialized this invention] example, and an understanding of this invention is presented. In addition, the following examples are examples which materialized this invention, and are not the things of the character which limits the technical range of this invention. The outline block diagram which the outline block diagram of the important section of the image formation equipment which drawing 1 requires for one example of this invention here, and drawing 2 require for the above-mentioned important section composition, the graph which shows the relation of the quantity of light and ambient temperature, and drawing 4 are graphs which show the relation of the amount of electrifications and ambient temperature in a photo conductor. [in / an electric discharge means / in drawing 3] With the image formation equipment concerning this example, as shown in drawing 1 and drawing 2, the thermometry equipment (for example, thermistor) which measures the ambient temperature near the installation position of the blank lamp 2 which counters a photo conductor 1 and this photo conductor 1, and is arranged is arranged, and this thermometry equipment 3 is connected to the control unit 4 which manages control of the image formation equipment concerned. The above-mentioned control unit 4 possesses CPU, various interfaces, memory, etc., is constituted, and is connected to the above-mentioned blank lamp 2 through the driver 5. The above-mentioned blank lamp 2 is constituted by installing Light Emitting Diode in the direction of an axis of the above-mentioned photo conductor 1. In this case, it replaces with the above-mentioned thermometry equipment 3, other thermometry equipments currently installed that the ambient temperature in the case of the image formation equipment concerned should be measured conventionally are used, and you may make it use the output signal from this thermometry equipment. This becomes possible to plan further cost reduction. The relation between ambient temperature and the quantity of light in Light Emitting Diode which constitutes the above-mentioned blank lamp 2, and the relation (refer to drawing 3 and drawing 4) between ambient temperature and the amount of electrifications in the above-mentioned photo conductor 1 are beforehand inputted into the memory in the above-mentioned control unit 4 as table data. Paying attention to the point that the amount of electrifications in the point that the quantity of light [in / Light Emitting Diode / so that clearly from a graph / in / above-mentioned each drawing / in this] changes to the ambient temperature of the circumference mostly in response to influence at-like / proportionally /-related origin, and a photo conductor 1 changes to-like / proportionally /-related origin mostly in response to the influence of the ambient temperature of the circumference, they are concretely taken into consideration.

[0007] Therefore, in this example equipment, first, the ambient temperature of the circumference is measured by the above-mentioned thermometry equipment 3, and this measurement data is inputted into the above-mentioned control unit 4. In the above-mentioned control unit 4, based on the above-mentioned table data in the above-mentioned

memory, the predetermined quantity of light based on ambient temperature is chosen, and the instruction value corresponding to the quantity of light is outputted to a driver 5. And the amount of electric supply to the above-mentioned blank lamp 2 is adjusted by this driver 5. That is, to the above-mentioned blank lamp 2, the amount of electric supply is adjusted by the modulation of pulse width or the modulation of a pulse period, and also change of pulse height, and the quantity of light adjustment is performed. If it explains concretely, the rate of change A of the quantity of light of the blank lamp 2 and the rate of change B of the amount of electrifications of a photo conductor in the detected ambient temperature will be computed and compared, the quantity of light to which the quantity of light of a blank lamp becomes [ A ] small from B at the adult time will be chosen, the quantity of light to which the quantity of light of a blank lamp becomes [ A ] large from B at the time of smallness will be chosen, and the amount of electric supply to a blank lamp will be Since the image formation equipment concerning this example is constituted as described above, it can perform quantity of light amendment of the blank lamp 2 with comparatively easy and cheap composition. Furthermore, since the amount of electrifications in a photo conductor 1 is also taken into consideration, the quantity of light amendment becomes the high thing of the system which \*\* (ed) in the actual condition. In addition, since the sensitivity concerning the above-mentioned photo conductor 1 can be beforehand known in the shipment stage in the manufacture maker as a result of inspection, it adjusts the amount of electric supply to the above-mentioned blank lamp 2 also in consideration of this sensitivity, and you may make it secure the further reliability to quantity of light adjustment. Furthermore, in this example equipment, taking into consideration the known sensitivity of the above-mentioned photo conductor 1, the rank division of the quantity of light of Light Emitting Diode used for the above-mentioned blank lamp 2 is carried out beforehand, and the amount of electric supply corresponding to this rank division is chosen suitably, and it outputs to the above-mentioned driver 5 as an instruction value corresponding to it, and may be made to perform quantity of light adjustment in the above-mentioned blank lamp 2. Furthermore, taking into consideration the measurement data detected by the above-mentioned thermometry equipment 3 in this example equipment, an image processing is performed in a tentative way at the time of the check work of the blank lamp 2, and you may make it give the instructions which adjust the amount of electric supply to the blank lamp 2 from a keyboard 6 from balance with this again. In this case, more delicate control is attained from the ability of quantity of light adjustment in the blank lamp 2 to be performed, looking at an actual picture. In addition, in the above-mentioned example, although the case where quantity of light adjustment in the blank lamp 2 which is an example of an electric discharger was performed was explained to the example, the technology concerning this invention is a thing that it can apply also in the case of the quantity of light adjustment in the electric discharge lamp used at the time of cleaning on the front face of a photo conductor

[0008]

[Effect of the Invention] In the image formation equipment equipped with an electric discharge means by which exposure removes the charge on a photo conductor as this invention was described above A thermometry means within the case of the image formation equipment concerned to measure the temperature near [ above-mentioned ] the electric discharge means at least, Since it is image formation equipment which possesses the control means which adjust the amount of electric supply to the above-mentioned electric discharge means based on the temperature measured by the above-mentioned thermometry means, and is characterized by the bird clapper, quantity of light amendment of an electric discharger can be performed with comparatively easy and cheap composition.

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## DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] The outline block diagram of the important section of the image formation equipment concerning one example of this invention.

[Drawing 2] The outline block diagram concerning the above-mentioned important section composition.

[Drawing 3] The graph which shows the relation of the quantity of light and ambient temperature in an electric discharge means.

[Drawing 4] The graph which shows the relation of the amount of electrifications and ambient temperature in a photo conductor.

[Description of Notations]

- 1 -- Photo conductor
  - 2 -- Blank lamp
  - 3 -- Thermometry equipment
  - 4 -- Control unit
  - 5 -- Driver
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[Translation done.]

## JP 05 - 107 888 A

### \* NOTICES \*

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1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

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### CLAIMS

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#### [Claim(s)]

[Claim 1] Image-formation equipment which possesses a thermometry means within the case of the image formation equipment concerned measure the temperature near [ above-mentioned ] the electric discharge means at least, and the control means which adjust the amount of electric supply to the above-mentioned electric discharge means based on the temperature measured by the above-mentioned thermometry means in image-formation equipment equipped with an electric discharge means to by which exposure removes the charge on a photo conductor, and is characterized by the bird clapper.

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### DETAILED DESCRIPTION

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#### [Detailed Description of the Invention]

[0001]

[Industrial Application] this invention relates to image formation equipments, such as a copying machine, and relates to the electric discharger from which the charge on a photo conductor is removed by exposure in detail.

[0002]

[Description of the Prior Art] In order to remove the charge of portions other than the predetermined field on the photo conductor by which uniform electrification was carried out in this kind of image formation equipment generally, exposure operation with a blank lamp is carried out. this although the above-mentioned blank lamp is constituted by installing light emitting diode (henceforth, Light Emitting Diode) in the direction of an axis of the above-mentioned photo conductor, since variation is in the performance (especially quantity of light) for every image formation equipment -- the quality of about 1 law -- an amendment -- things are needed Then, as image formation equipment equipped with the above amendment functions, the thing of an indication is known by JP,61-180262,A, for example. With the equipment of an indication in the above-mentioned official report, the photo detector is installed to the blank lamp and the quantity of light of the reflected light from a photo conductor front face is detected by this photo detector. And based on this amount of reflected lights, an amendment signal is outputted to the drive circuit of the above-mentioned blank lamp from an amendment circuit, and, thereby, quantity of light adjustment in the above-mentioned blank lamp is performed. Specifically, quantity of light amendment is performed by changing the duty ratio of the force current to each Light Emitting Diode.

[0003]

[Problem(s) to be Solved by the Invention] However, in the above conventional image formation equipments, since the above-mentioned photo detector needed for quantity of light amendment of a blank lamp is expensive in price, this use is a prevention factor at the time of planning cost reduction of the whole equipment. Then, it is originated in view of the above-mentioned situation, and this invention aims at offer of image formation equipment equipped with the function in which quantity of light amendment of electric dischargers, such as a blank lamp, can be performed with comparatively easy and cheap composition.

[0004]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, the main means which this invention adopts in the image formation equipment with which the place made into the summary was equipped with an electric discharge means by which exposure removes the charge on a photo conductor. It is image formation equipment concerning the point of coming to provide a thermometry means within the case of the image formation equipment concerned to measure the temperature near [above-mentioned] the electric discharge means at least, and the control means which adjust the amount of electric supply to the above-mentioned electric discharge means based on the temperature measured by the above-mentioned thermometry means. This notes the point that the quantity of light of an electric discharge means changes to-like-proportionally-related origin mostly in response to the influence of the ambient temperature of the circumference, as shown in drawing 3.

[0005]

[Function] In the image formation equipment concerning this invention, the ambient temperature near the electric discharge means is measured by the thermometry means at least, and the amount of electric supply to an electric discharge means within a case is adjusted by control means based on this measured value. Thereby, the quantity of light is adjusted in the above-mentioned electric discharge means.

[0006]

[Example] Below, with reference to an accompanying drawing, it explains per [which materialized this invention] example, and an understanding of this invention is presented. In addition, the following examples are examples which materialized this invention, and are not the things of the character which limits the technical range of this invention. The outline block diagram which the outline block diagram of the important section of the image formation equipment which drawing 1 requires for one example of this invention here, and drawing 2 require for the above-mentioned important section composition, the graph which shows the relation of the quantity of light and ambient temperature, and drawing 4 are graphs which show the relation of the amount of electrifications and ambient temperature in a photo conductor. [in / an electric discharge means / in drawing 3] With the image formation equipment concerning this example, as shown in drawing 1 and drawing 2, the thermometry equipment (for example, thermistor) which measures the ambient temperature near the installation position of the blank lamp 2 which counters a photo conductor 1 and this photo conductor 1, and is arranged is arranged, and this thermometry equipment 3 is connected to the control unit 4 which manages control of the image formation equipment concerned. The above-mentioned control unit 4 possesses CPU, various interfaces, memory, etc., is constituted, and is connected to the above-mentioned blank lamp 2 through the driver 5. The above-mentioned blank lamp 2 is constituted by installing Light Emitting Diode in the direction of an axis of the above-mentioned photo conductor 1. In this case, it replaces with the above-mentioned thermometry equipment 3, other thermometry equipments currently installed that the ambient temperature in the case of the image formation equipment concerned should be measured conventionally are used, and you may make it use the output signal from this thermometry equipment. This becomes possible to plan further cost reduction. The relation between ambient temperature and the quantity of light in Light Emitting Diode which constitutes the above-mentioned blank lamp 2, and the relation (refer to drawing 3 and drawing 4) between ambient temperature and the amount of electrifications in the above-mentioned photo conductor 1 are beforehand inputted into the memory in the above-mentioned control unit 4 as table data. Paying attention to the point that the amount of electrifications in the point that the quantity of light [in / Light Emitting Diode / so that clearly from a graph / in / above-mentioned each drawing / in this] changes to the ambient temperature of the circumference mostly in response to influence at-like / proportionally /-related origin, and a photo conductor 1 changes to-like / proportionally /-related origin mostly in response to the influence of the ambient temperature of the circumference, they are concretely taken into consideration.

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Furthermore, since the amount of electrifications in a photo conductor 1 is also taken into consideration, the quantity of light amendment becomes the high thing of the system which <sup>\*\*</sup>(ed) in the actual condition. In addition, since the sensitivity concerning the above-mentioned photo conductor 1 can be beforehand known in the shipment stage in the manufacture maker as a result of inspection, it adjusts the amount of electric supply to the above-mentioned blank lamp 2 also in consideration of this sensitivity, and you may make it secure the further reliability to quantity of light adjustment. Furthermore, in this example equipment, taking into consideration the known sensitivity of the above-mentioned photo conductor 1, the rank division of the quantity of light of Light Emitting Diode used for the above-mentioned blank lamp 2 is carried out beforehand, and the amount of electric supply corresponding to this rank division is chosen suitably, and it outputs to the above-mentioned driver 5 as an instruction value corresponding to it, and may be made to perform quantity of light adjustment in the above-mentioned blank lamp 2. Furthermore, taking into consideration the measurement data detected by the above-mentioned thermometry equipment 3 in this example equipment, an image processing is performed in a tentative way at the time of the check work of the blank lamp 2, and you may make it give the instructions which adjust the amount of electric supply to the blank lamp 2 from a keyboard 6 from balance with this again. In this case, more delicate control is attained from the ability of quantity of light adjustment in the blank lamp 2 to be performed, looking at an actual picture, in addition, in the above-mentioned example, although the case where quantity of light adjustment in the blank lamp 2 which is an example of an electric discharger was performed was explained to the example, the technology concerning this invention is a thing that it can apply also in the case of the quantity of light adjustment in the electric discharge lamp used at the time of cleaning on the front face of a photo conductor

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